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THREE NEW SPECIES OF COLOMBIAN LACE BUGS OF THE GENERA *LEPTODICTYA* AND *LEPTOPHARSA* (HETEROPTERA: TINGIDAE)

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Abstract.—Three new species of lace bugs from Colombia are described and illustrated by habitus drawings: *Leptodictya fuscipes* collected on an unidentified species of Poaceae; *Leptopharsa madrigali* found on *Phaseolus* species (Fabaceae); and *Leptopharsa reflexa* taken on *Roupala "glabriflora"* (Proteaceae).

A small collection of lace bugs representing samplings of environments in the vicinity of crop fields in Colombia was submitted by Dr. Raul Velez-Angel, Universidad Nacional, Medellin, Colombia, for identification. In it were three species new to science. Neither of the two genera involved here has had a recent key to aid in identification of the numerous species included in the Drake & Ruhoff (1965) catalog: *Leptodictya* Stal with 52 species and *Leptopharsa* Stal with 105 species. Construction of such keys at this time is impractical, but as names are needed for making known more information about these insects, they are described here.

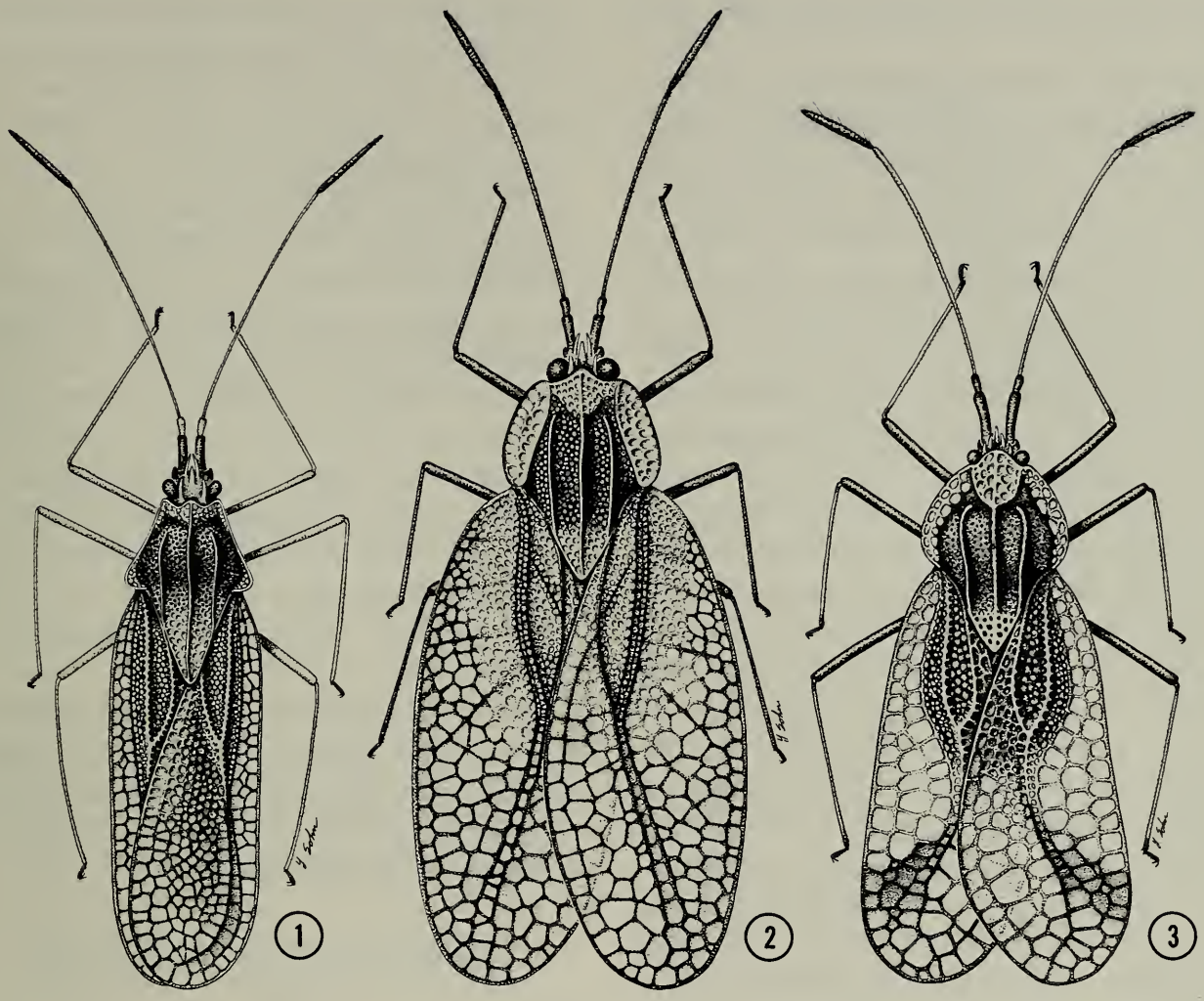
Leptodictya fuscipes, new species
Fig. 2

Diagnosis.—This species belongs among those forms of *Leptodictya* in which the costal area has embrowned veins everywhere except in a broad band adjacent to and along the full length of the discoidal area; veins in this area are milky white and together form a sort of halo around the discoidal areas. *L. fuscipes* can be distinguished most readily from all other members of the group by the strongly embrowned limiting veins of the discoidal area plus the nearly black femora.

Description.—Length 4.5–5.1 mm. Head, surface of pronotum except apical half of posterior projection, and under surface of body black, these parts usually coated with a dense white pruinosity. Antenna blackened except for the slightly paler apex of segment III. Bucculae, except narrow margins, black. Legs deep brown to black. Paranota and anteromedian cyst mostly milky white, outermost vein (along fold) of paranotum and mediodorsal vein of cyst light brown. Longitudinal pronotal carinae light brown. Hemelytral cells hyaline; veins delimiting discoidal area, of costal area (except for the broad band along discoidal area), and of most of sutural area fuscous to black; discoidal area with a faintly but distinctly embrowned diagonal line across midlength. Sternal laminae yellow.

Head deflexed, with 5 elongate pale spines directed forward or slightly obliquely upward: occipital pair; pair above base of clypeus; and one spine on midline of dorsum of head. Antennal segment I about as long as head, twice as long as II; III 4.5 times as long as I + II; IV slightly less than half as long as III. Labium attaining posterior end of mesosternal laminae.

Pronotum with anteromedian cyst tectate, as high as median carina, anteriorly produced medially as a right angle attaining medlength of eyes, posteriorly extending almost to apex of interhumeral convexity. Lateral longitudinal carinae very low, with a single row of punctiform cells; median carina twice as high as lateral carinae, uniseriate.



Figs. 1–3. 1, *Leptopharsa reflexa* new species, actual length 3.5 mm. 2, *Leptodictya fuscipes* new species, actual length 4.5 mm. 3, *Leptopharsa madrigali* new species, actual length 3.8 mm.

Discoidal area confined to basal half of hemelytron, with 4–5 cells across greatest width. Costal area with 4 usually prominent, regular, nearly straight cross veins between which are numerous irregular cells; cells in milky area along discoidal area distinctly reduced. Hypocostal laminae uniseriate.

Peritreme obliquely transversely auriculate, reaching hypocostal lamina. Sternal laminae absent from prosternum, present and subparallel on mesosternum, present and forming a cordate outline on metasternum. Abdomen convex, impunctate.

Holotype male, Colombia; "Cocorna (Ant. [ioquia]), Agt. 1981, A. Madrigal, en Graminea," deposited in the National Museum of Natural History. Paratypes (deposited in Universidad Nacional, Medellin, Colombia, and National Museum of Natural History): 1 male, 2 females with same data as holotype.

The species name directs attention to the dark fuscous to black legs.

Leptopharsa madrigali, new species
Fig. 3

Diagnosis.—Among those species of *Leptopharsa* with divergent hemelytra (apices, at rest, not completely overlapping, see Fig. 3) this species may be recognized by the combination of 2 regular rows of subequal cells in the costa along the basal three-fourths of the discoidal area; the short occipital spines which do not surpass the antennal

insertions; and the wholly blackened femora.

Description.—Length 3.4–4.0 mm. Head, pronotal surface (except pale posterior apex), and body ventrally black. Antennal segments I and IV black, II brown, III yellow. Bucculae black except for yellow ventral row of cells. Femora, extreme ends of tibiae, and tarsi black; most of tibia yellow. Pronotal outgrowths (paranota, longitudinal carinae, and anteromedian cyst) mostly yellow with hyaline cells. Discoidal and subcostal areas with most veins black. Costal area, including veins, pale except for fuscous band radiating posterolaterally from darkened base of membranal area. Sternal laminae yellow.

Head vertically deflexed, with 5 forward directed short spines: occipital spines decumbent, not or just reaching antennal insertions; a pair of supraclypeal spines, a single spine above bases of latter pair. Antennal segment I about as long as width of head across eyes; II almost a third as long as I and twice as long as wide; III about 4 times as long as I + II; IV about two-thirds as long as III. Labium reaching posterior ends of mesosternal laminae.

Pronotum with anteromedian cyst inflated, slightly higher than median carina, extending almost to apex of head, extending less than half way up anterior slope of interhumeral convexity. Longitudinal carinae very low, composed of a single row of punctureliike cells. Paranotum biseriate, outline convex around humerus, thence straight or weakly convex almost to rounded anteroapical angle.

Hemelytron with costal margin weakly convexly diverging on basal fifth, thence straight and diverging to apical fourth. Discoidal area confined to basal two-fifths of hemelytron, with 5 cells across greatest width. Subcostal area with 4–5 cells across greatest width. Costal area biseriate along basal three-fourths of discoidal area, irregularly 3–4 cells wide beyond apex of discoidal area. Hypocostal lamina uniseriate.

Peritreme obliquely transversely auriculate, reaching hypocostal lamina. Sternal laminae present on all 3 sterna, low uniseriate, more widely separated on meta- than on pro- or mesosterna; sternal groove not interrupted by transverse carina. Abdomen convex, impunctate.

Holotype, male, Colombia; "Urrao (Ant. [ioquia]), Mar. 1977, A. Madrigal C., en *Phaseolus* sp." (Fabaceae), deposited in the United States National Museum of Natural History. Paratypes deposited in the Universidad Nacional, Medellin, Colombia, and the National Museum of Natural History; 2 females with same data as holotype; 3 females, La Estrella (Ant. [ioquia]) Colombia, April 1985, A. Madrigal on Fabaceae; 1 male and 1 female, Coldos (Ant. [ioquia]), Colombia, Nov. 1973, A. Madrigal, on Fabaceae.

The species name dedicates this lace bug to the Colombian entomologist, A. Madrigal C., who obtained this type series and has done much to increase knowledge of Heteroptera in Colombia.

Leptopharsa reflexa, new species
Fig. 1

Diagnosis.—Among the species of *Leptopharsa* in which the sutural areas overlap at rest (apices not divergent, see Fig. 1), this new species belongs to a group characterized by the following features: 1) 3–5 long cephalic spines; 2) low, tectate (in no way swollen) anteromedian cyst separated from the higher median longitudinal pronotal carina by a deep angulation; 3) a narrow (1–2 rows of cells) paranotum continued at same width around humerus and then incurved and abruptly terminated to form a distinct angle with the posterior pronotal projection; and 4) a biseriate costal area.

The 7 species in the group diagnosed with the above enumeration of characters can be separated by the following couplets:

1. Pronotum with prominent, projecting anterolateral angles, its anterior margin as wide or wider than head across eyes 2

– Pronotum without distinct anterolateral angles, its anterior margin narrower than width of head across eyes 6

2. Height of longitudinal pronotal carinae over crest of inter-humeral convexity greater than diameter of femur ..... *tenuis* (Champion)

– Height of longitudinal pronotal carinae over crest of interhumeral convexity less than diameter of a femur 3

3. Occipital spines decurved, decumbent, cylindrical, apices blunt, not surpassing antennal insertions .... *albella* Drake

– Occipital spines long, tapering to acute apices, projecting obliquely away from head and extended beyond antennal insertions 4

4. Head with 5 spines: a pair of short spines immediately below the median supraclypeal spine plus a pair of occipital spines 5

– Head with 3 spines: a median supraclypeal spine and a pair of occipital spines ..... *avia* Drake

5. Antennal segment I short, about twice as long as length of eye. Dorsal aspect darker: head, pronotal surface, and generally veins of discoidal area lightly but distinctly embrowned ..... *fica* Drake

– Antennal segment I long, about 2 and a half times as long as length of eye. Dorsal aspect whitish to faintly yellowed (a few veins sometimes darkened) ..... *delicata* Monte

6. Paranotum vertically reflexed, free margin straight from anterior end of prominent humerus .... *reflexa,* new species

– Paranotum weakly obliquely elevated, free margin convex from humerus to anterior end.. *elegantula* Stal

Description.—Length 3.3–3.6 mm. Head, pronotal surface (except anterior margin and most of posterior projection) black, these surfaces may be covered with a light coating of white pruinosity. Antennal segments I and IV black, II and III reddish yellow. Bucculae mostly white. Legs, except black tarsi, reddish yellow. Pronotum with anteromedian cyst, longitudinal carinae, and paranota yellow, cells hyaline to lightly enfumed. Hemelytral veins mostly yellow, those in discoidal and subcostal areas sometimes brown. Sternal laminae pale yellow.

Head vertically deflexed, with 5 cephalic spines: pair of decurved, decumbent occipitals reaching antennal insertions; supraclypeal pair and median spine directed anteriorly. Antennal segment I slightly shorter than length of head, twice as long as II, III nearly 5 times as long as I + II, IV one third as long as III. Labium reaching posterior ends of mesosternal laminae.

Pronotum with anteromedian cyst small, lower than median longitudinal carina, forming a short angulation above base of head, posteriorly terminated between calli, not ascending interhumeral convexity. Longitudinal carinae low, uniseriate, median one slightly higher posteriorly. Paranotum vertically reflexed, wholly biseriate or in part uniseriate; free margin straight from anterior end to projecting humerus.

Hemelytra with apices overlapping, axes and costal margins parallel. Discoidal area 4–5 cells wide, confined to basal two-fifths of hemelytron. Subcostal area 3–4 cells wide. Costal area biseriate along basal three-fourths, uniseriate on apical fourth. Hypocostal lamina uniseriate.

Peritreme small, weak, transversely auriculate, reaching hypocostal lamina. Laminae present on all 3 sterna, straight and parallel on pro- and mesosterna, more widely separated and bowed convexly outward on metasternum; sternal groove not interrupted by transverse carina. Abdomen convex, impunctate.

Holotype male, Colombia, "Guarne (Ant. [ioquia]), Jun 1978, A. Madrigal C., en *Roupala glabriflora*" (Proteaceae), deposited in the United States National Museum of Nat-

ural History. Paratypes: 4 males, same data as holotype, deposited in Universidad Nacional, Medellin, Colombia, and in National Museum of Natural History.

The species name was suggested by the vertically reflexed paranota.

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